

ORIGINAL ARTICLE

Interdisciplinary cooperation of GPs in palliative care at home: A nationwide survey in the Netherlands

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Abstract

Objective. To investigate the occurrence and predictors of interdisciplinary cooperation of GPs with other caregivers in palliative care at home. **Design.** In a prospective study among 96 general practices, the GPs involved identified all dying patients during the study period of 12 months. The GPs received an additional post-mortem questionnaire for each patient who died during the study period, and registered the healthcare providers with whom they cooperated. Multivariable logistic regression analysis was used to identify the predictors of GP cooperation with other caregivers. **Setting.** Second Dutch National Survey in General Practice. **Subjects.** A total of 743 patients who received palliative care according to their GP. **Main outcome measures.** Interdisciplinary cooperation between GP and other healthcare providers. **Results.** During the study period, 2194 patients died. GPs returned 1771 (73%) of the questionnaires. According to the GPs, 743 (46%) of their patients received palliative care. In 98% of these palliative care patients, the GP cooperated with at least one other caregiver, with a mean number of four. Cooperation with informal caregivers (83%) was most prevalent, followed by cooperation with other GPs (71%) and district nurses (63%). The best predictors of cooperation between GPs and other caregivers were the patient's age, the underlying disease, and the importance of psychosocial care. **Conclusion.** In palliative care patients, GP interdisciplinary cooperation with other caregivers is highly prevalent, especially with informal caregivers and other primary care collaborators. Cooperation is most prevalent in younger patients, patients with cancer as underlying disease, and if psychosocial care is important.

Key Words: Caregivers, epidemiology, family practice, general practice, interdisciplinary cooperation, palliative care

In the Netherlands, healthcare is characterized by a strong emphasis on primary care, where the GP is the central professional in the management and coordination of the patient's treatment [1]. Primary care also provides home care to the inhabitants of homes for the elderly. Almost 60% of patients with non-acute illnesses die at home [2], and there is general consensus that palliative care should be provided in the patient's home [3]. The ageing population and the growing number of non-acute deaths are expected to increase the GP's contribution to meeting the increasing need for palliative care [4,5].

Interdisciplinary cooperation is essential in palliative care. However, the extent of it at home is unknown.

- In almost all studied patients the GP cooperated at least with one other caregiver.
- Each GP cooperated on average with four healthcare providers, with informal caregivers as most prevalent.
- Cooperation is most prevalent in younger patients, patients with cancer as underlying disease, and if psychosocial care is important.

The WHO defines palliative care as an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual [6]. Interdisciplinary cooperation is an integral part of palliative care [7] as the WHO definition further describes palliative care as using 'a team approach to address the needs of patients and their families if indicated' [6]. Qualitative studies show that patients and GPs experience interdisciplinary cooperation as an important aspect of palliative care [8,9]. A systematic review comparing interventions by multidisciplinary teams in palliative and hospice care with normal practice showed benefits of the team approach [10]. However, the extent and level of interdisciplinary cooperation in palliative care at home is unknown.

Some factors might predict GP cooperation with other caregivers. As both older and female patients receive less informal care [11], it might be expected that age and gender may determine GP cooperation with others. In patients with greater pain and somatic problems, and in patients with psychosocial problems, cooperation may be more prevalent because multidisciplinary knowledge is needed to care for these patients. The aim of this study is to investigate the extent and predictors of the level of GPs' cooperation with other caregivers in palliative care at home.

Material and methods

Patients

The data used in this study were obtained from the second Dutch National Survey of General Practice, in which a representative sample of 96 Dutch general practices participated, with a total of 375 899 patients involved. The start of the one-year registration period of the study practices varied between April 2000 and January 2001 [12]. The GPs received an additional post-mortem questionnaire designed for this study for each patient who died during the year of registration.

Measurements

A palliative care patient was defined as a patient to whom, according to the GP, palliative care was provided. Because it is difficult to predict the patient's life expectation [13], we chose this subjective labelling, which allowed different factors related to palliative care to be taken into account. We also asked for underlying diseases. We assessed

the importance of the three palliative care domains (somatic care, psychosocial care, and spiritual care) for each actual patient on a five-point Likert scale (1 = lowest importance of specific item to 5 = maximum importance). Finally, we asked the GPs to identify for each palliative care patient the level of cooperation with the following caregivers: informal caregiver, colleague GP, district nurse (DN), clinical specialist (physician), member of the home care team other than DN, pharmacist, social worker, physiotherapist, volunteer non-family caregiver, spiritual caregiver, and other caregivers. GPs recorded the level of cooperation according to the following categories: none, incidental, and intensive. Cooperation was defined as working together with the specific care provider.

Statistical analysis

We analysed the GP's interdisciplinary cooperation in palliative care at the level of care for the individual patient. Descriptive statistics were computed for patient characteristics, importance of the three palliative care domains, GP cooperation with other caregivers, and the mean number of collaborators per patient.

We recoded scores of importance of palliative care domains into two categories: scores of 1, 2, and 3 were grouped together as "not so important" and scores of 4 and 5 as "important". In the open text "cooperation with another collaborator", homes for the elderly were frequently cited ($n=104$). In these cases we recoded GP "cooperation with another caregiver" as "cooperation with homes for the elderly". Cooperation with social workers was not frequent ($n=25$). We recoded this category as "cooperation with another caregiver". In the tables we use the recoded definitions of collaborators.

For all patients, cooperation was made dichotomous: "no" was recorded when the GP did not cooperate with the specific caregiver, "yes" was recorded when cooperation was incidental or intensive. Multivariable, stepwise, forward logistic regression analysis was used to identify predictors of cooperation with each other caregiver. Plausible interactions (e.g. gender by age, age by underlying disease, underlying disease by importance of somatic care) were included. First, all possible predictors were tested univariately, after which the one with the lowest p-value was entered into the model ($\alpha=0.05$). This was repeated until addition of the next predictor did not improve the model significantly. To check for any change in the model, we varied this procedure. In the case of significant interaction, two models were presented.

Results

In the 96 general practices 2194 patients died during the year of registration. Of the 2194 questionnaires sent to GPs, 1771 were returned (81%), and 1608 (73%) were filled in completely. These GPs worked in 86 general practices, and provided palliative care to 743 patients (46%). Table I gives the patient characteristics of the study population. The characteristics of the patients whose GP did not respond to the questionnaire were not different concerning demographic characteristics (age, gender) and number of patient–GP contacts ($\alpha = 0.05$).

In the palliative care patients, GPs perceived somatic care as the most important domain in care with a mean score of 4.1 (95% CI 3.1–5.0), followed by psychosocial care with a mean score of 3.4 (95% CI 2.3–4.6), and spiritual care with a mean score of 2.1 (95% CI 0.9–3.3).

GPs cooperated with at least one other caregiver in 98% of all patients (Table II). The mean number of collaborators was near to four, with a mean of almost one intensive cooperation per patient. Cooperation with informal caregivers (83%) was most prevalent, followed by cooperation with other GPs (71%) and district nurses (63%). Intensive cooperation was most frequent between GPs and informal caregivers (63%).

Table III shows the significant factors in the models predicting GP cooperation with other caregivers in patients receiving palliative care. All models had relatively low values of the variation explained by the model. In informal caregivers, specialists, and pharmacists we found the interaction between cancer as underlying disease and age as a significant factor in our initial model; hence we presented two models: one for cancer patients, and one for non-cancer patients. Age was a negative predictor in the

models for informal caregivers (cancer patients), DNs, specialists, and pharmacists (non-cancer patients). Cancer as underlying disease was a positive predictor in the model for cooperation between GPs and DNs. Psychosocial care was in many models a positive predictor; in the model estimating the cooperation between GPs and homes for the elderly it was a negative predictor.

Discussion

In almost all cases of patients receiving palliative care at home in the Netherlands, the GP cooperated with at least one other caregiver, with a mean number of four collaborators. GPs' cooperation with other caregivers is most common with informal caregivers and other primary caregivers. The best predictors for cooperation in palliative care between GPs and other caregivers were the patient's lower age, cancer as the underlying disease, and psychosocial care as important in care of the actual patient.

This study was embedded in the second Dutch National Survey of General Practice, which has generated solid data due to its quality and size [12]. Another strength of this study is the total response rate of 73% for the written questionnaire, which is high compared with mean non-response rates of 39% reported in published studies carried out in general practice [14]. As most studies in palliative care are limited to cancer patients [15], a further strength is that we included both cancer and non-cancer patients.

Limitations of this study are that no information was obtained regarding the content and frequency of cooperation, or about GP characteristics and the motivations of GPs for interdisciplinary cooperation. Physician characteristics, such as age, gender, experience, or education, explain variation in decisions in end-of-life care [16], and these characteristics could also explain some variation in cooperation found in our study. Furthermore, we were unable to measure outcomes, hence we could not analyse any possible relation between quality of care and GP cooperation with other caregivers. All models predicting GP cooperation show relatively low values of the variation explained by the model, so it appears that GP cooperation is associated with many more factors than those included in this study.

The results of this study show that in palliative care at home in the Netherlands, the GPs seldom work alone. With a mean of four collaborators for each patient receiving palliative care, GPs contribute to the goal of palliative care as a multidisciplinary approach [6]. For most patients the GP works with one collaborator at a level labelled as intensive, and in most cases this is the informal caregiver or the

Table I. Characteristics of patients receiving palliative care by their GP in the Netherlands ($n = 743$).¹

Factor	
Age:	% (n)
< 70 years	28 (207)
70–80 years	27 (196)
80–90 years	31 (228)
> 90 years	14 (106)
Mean age, years [95% CI]	76 [61–91]
Gender:	% (n)
Male	47 (349)
Female	53 (394)
Underlying disease:	% (n)
Cancer	56 (412)
Non-cancer	44 (327)

¹Number of missing values: age = 6, underlying disease = 4.

Table II. GP cooperation with other caregivers in care for patients receiving palliative care (n = 743).

	Incidental cooperation ¹ (n)	%	Intensive cooperation ¹ (n)	%	total (n)	%
Informal caregiver	143	19	471	63	614	83
Colleague general practitioner	449	60	77	10	526	71
District nurse (DN)	220	30	248	33	468	63
Specialist (physician)	302	41	109	15	411	55
Home care, other than DN	173	23	139	19	312	42
Pharmacist	163	22	26	3.5	189	25
Home for the elderly	28	3.8	76	10	104	14
Physiotherapist	67	9.0	6	0.8	73	9.8
Volunteer	38	5.1	18	2.4	56	7.5
Spiritual caregiver	44	5.9	10	1.3	54	7.3
Other caregiver	32	4.3	17	2.3	49	6.6
No cooperation					17	2.3
Mean number of collaborators (95%CI)		2.9 [1.4–4.4]		0.97 [0.0–2.0]		3.8 [2.1–4.6]

¹To determine cooperation we asked the following question: “Did you cooperate with the following carers while providing care to this patient?” Answer categories were: no, incidentally, and intensively.

district nurse. However, with the aim of directing palliative care at “the patient and their family” [6] cooperation with informal caregivers can be improved to meet the concerns of both patients and the informal carers [17].

GP cooperation with colleague GPs was present in 71% of patients. This could be considered low, as patient information is expected to be handed over after office hours. In the Netherlands over 90% of the population is covered by out-of-hours cooperatives [18]. It is possible that GPs take care of their palliative care patients themselves, or that GPs do not define handing over patient information as cooperation. Although this needs future exploration, it does question the quality of communication and continuity by the GP during out-of-office hours [19].

In contrast to our expectations, the patient's gender is not a significant predictor. A GP's cooperation with other caregivers is predicted by the age of the patient. The most plausible reason is that due to the potential for having more informal caregivers, younger patients can stay at home longer with more complex diseases. Hence more caregivers could be involved. However, another possibility is that GPs are hindered in cooperation because they are confronted by many challenges, have to develop close communication with other professionals [20], and are unaware of the opportunities of the disciplines involved in care for the elderly [21]. Future research should explore this important issue further.

Furthermore, GPs cooperated with others more in the case of cancer patients than non-cancer patients. This may be because more caregivers are needed for symptoms that occur more frequently and are difficult to control [22]. However, this raises the question of whether older and non-cancer patients need such cooperation less or whether they are being

excluded from something from which they might benefit.

The most striking predictor of the cooperation with other caregivers is the importance of psychosocial care. This finding is difficult to interpret, as we have no data on the content of the collaboration. An explanation may be that the nature of the psychosocial problems itself may demand more communication and coordination [23], or that the prevalence of psychosocial problems is intertwined with somatic issues [24].

Our finding that few GPs cooperate with spiritual caregivers may mean that GPs deal with most spiritual problems themselves, or that few patients have spiritual problems, or that few GPs recognize spiritual problems. However, also plausible is that patients and GPs do not see the provision of spiritual care as the task of the GP [25]. Given the importance of spiritual aspects within palliative care [26,27], these issues will need special attention in future studies.

Given the diversity of problems and the complexity of palliative care, the involvement of all necessary disciplines must be encouraged. On the other hand, the number of caregivers needs to be limited because patients and family prefer fewer caregivers and personal continuity [2]. One of the caregivers involved must be responsible for the organization of the involvement of all relevant disciplines. In palliative care at home, GPs or DNs could perform this task [28]; however, there is still discussion on who should be in charge [9,29,30]. For the patient, this is less important as long as any competent caregiver will perform this task. All caregivers involved should make clear arrangements for the use of available and necessary expertise,

Table III. Odds ratios and confidence intervals of significant factors in models predicting GP cooperation with each other caregiver for patients receiving palliative care (n = 743).¹

Caregiver	Patient characteristics ²			Importance of the domains of palliative care		
	Sex	Age	Underlying disease	Somatic care (1–5)	Psychosocial care (1–5)	Spiritual care (1–5)
Informal caregiver ³						
Cancer patients		0.964 [0.939–0.990]				
Non-cancer patients					1.28 [1.04–1.58]	
Colleague general practitioner				1.26 [1.07–1.48]	1.18 [1.11–1.50]	
District nurse (DN)		0.976 [0.962–0.990]	2.87 [1.99–4.12]		1.34 [1.15–1.55]	
Specialist ³						
Cancer patients		0.979 [0.964–0.994]				
Non-cancer patients		0.923 [0.897–0.950]			1.35 [1.10–1.66]	
Home care, other than DN					1.44 [1.37–1.58]	
Pharmacist ³						
Cancer patients						
Non-cancer patients		0.969 [0.949–0.990]				
Home for the elderly	1.836 [1.064–3.167]	1.139 [1.098–1.182]	0.48 [0.27–0.86]	1.53 [1.17–1.20]	0.78 [0.63–0.96]	
Physiotherapist			0.21 [0.12–0.37]	1.46 [1.10–1.94]		1.39 [1.14–1.69]
Voluntary non-family caregiver						1.456 [1.18–1.81]
Spiritual caregiver	2.231 [1.191–4.178]		1.76[1.21–2.56]		2.18 [1.73–2.73]	
Other caregiver					1.51 [1.11–2.03]	

¹Number of missing values: age = 6, underlying disease = 4, for somatic care = 11, psychosocial care = 13, and spiritual care = 35. Each line represents the significant factors for predicting GP cooperation with the specific caregiver. ²Sex: 1 = male, 2 = female, an odds ratio > 1 means greater odds for women; age (years), an odds > 1 means greater odds for elderly; underlying disease: 0 = non-cancer, 1 = cancer; an odds ratio > 1 means greater odds for cancer patients. ³In these models we found interaction between cancer and age, so we presented two models: one for cancer patients and one for non-cancer patients.

responsibilities, and communication; after all that is what cooperation is about.

Ethical approval

The study was carried out according to Dutch legislation on privacy. The privacy regulation of the study was approved by the Dutch Data Protection Authority. No further ethical approval was needed.

Conflicts of interest

None.

Acknowledgements

The authors wish to thank all the general practitioners for their contribution to this study. This project was funded by the Dutch Ministry of Health, Welfare and Sports, reference number: 68.3637–1051253–352441-00.

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